AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A plasma etching reactor comprising a reaction chamber ~~(1)~~ surrounded by a leakproof wall ~~(2)~~, said reaction chamber containing a substrate support ~~means (3),~~ and communicating with a plasma source ~~(4)~~, ~~is characterized in that it further comprises~~said reactor further comprising: a heater liner ~~(14)~~ of ~~an appropriate~~a metal or alloy lining ~~all or~~ at least part of the leakproof wall ~~(2)~~ of the reaction chamber ~~(1)~~ in non-leakproof manner, and an intermediate thermal insulation space ~~(15)~~ provided between the heater liner ~~(14)~~ and the leakproof wall ~~(2)~~ of the reaction chamber ~~(1)~~.

2. (Currently Amended) A reactor according to claim 1, characterized in that the ~~appropriate~~ metal or alloy is selected from metals and alloys that ~~firstly~~ do not react with the fluorine-containing etching gas or the passivation gas to form volatile compounds~~, and secondly do not emit contaminating atoms under the effect of plasma bombardment~~.

3. (Currently Amended) A reactor according to claim 2, characterized in that ~~the appropriate~~said metal is aluminum or titanium.

4. (Currently Amended) A reactor according to claim 1, characterized in that it further comprises:

bias means ~~(10, 11)~~ for biasing the substrate support ~~means (3)~~ in order to control bombardment by particles coming from the plasma;

an etching gas source ~~(9a)~~, and means ~~(9b)~~ for controlling the etching flow rate to govern the introduction of etching gas into the plasma source ~~(4)~~;

a passivation gas source ~~(9c)~~, and means for controlling the passivation flow rate ~~(9d)~~ for governing the introduction of passivation gas into the plasma source ~~(4)~~; and

a control device ~~(9e)~~ adapted to cause the etching gas flow rate control means ~~(9b)~~ and the passivation gas flow rate control means ~~(9d)~~ to operate in alternation.

5. (Currently Amended) A reactor according to claim 1, characterized in that the heater liner ~~(14)~~ is fastened to the leakproof wall ~~(2)~~ of the reaction chamber ~~(1)~~ by a small number of ~~fastening points~~fasteners ~~(16a, 16b)~~.

6. (Currently Amended) A reactor according to claim 5, characterized in that the intermediate space between the heater liner ~~(14)~~ and the leakproof wall ~~(2)~~ of the reaction chamber ~~(1)~~ communicate with the central space of the reaction chamber ~~(1)~~ via an annular space ~~(14c)~~ of small thickness.

7. (Currently Amended) A reactor according to claim 5, characterized in that the ~~fastening points~~fasteners ~~(16a, 16b)~~ are of a material which opposes ~~thermally insulating~~

~~structure opposing~~ the transfer of heat energy by conduction from the heater liner ~~(14)~~ to the leakproof wall ~~(2)~~ of the reaction chamber ~~(1)~~.

8. (Currently Amended) A reactor according to claim 5, characterized in that the heater liner ~~(14)~~ is suspended from the leakproof wall ~~(2)~~ of the reaction chamber ~~(1)~~ by three projections having heads, projecting beneath the face of the leakproof wall ~~(2)~~ and engaged in keyhole-shaped slots each having a wide portion and for passing a head and a narrow portion for retaining the head.

9. (Currently Amended) A reactor according to claim 1, characterized in that the heater liner ~~(14)~~ is thermally coupled to a heater ~~means such as electrical resistances (17)~~ suitable for connection to an external source of electrical energy.

10. (Currently Amended) A reactor according to claim 9, characterized in that the heater comprises electrical resistances ~~(17)~~ comprise thin-film electrical resistances and/or electrical resistances of the thermocoaxial type.

11. (Currently Amended) A reactor according to claim 1, characterized in that the heater liner ~~(14)~~ is heated by radiant heater means such as infrared elements.

12. (Currently Amended) A reactor according to claim 1, characterized in that the heater liner ~~(14)~~ is associated with temperature-regulator means ~~(18-21)~~ for regulating its temperature in a ~~suitable~~desired range of temperature values.

13. (Currently Amended) A reactor according to claim 1, characterized in that the heater liner ~~(14)~~ includes a heater ~~means (17)~~ suitable for heating it to a temperature higher than 150°C.

14. (Canceled)

15. (Currently Amended) A reactor according to claim 1, characterized in that downstream from the substrate support ~~means (3)~~ the reaction chamber ~~(1)~~ is limited by a conductive grid ~~(5)~~ in thermal contact with the heater liner ~~(14)~~.

16. (Currently Amended) A reactor according to claim 1, characterized in that the substrate support ~~means (3) comprise~~comprises electrostatic electrodes ~~(3a)~~ for attracting the substrate.

17. (Canceled)

18. (Canceled)

Please add the following new claim:

19. (New) A reactor according to claim 2, characterized in that the metal or alloy is selected from metals and alloys that do not emit contaminating atoms under the effect of plasma bombardment.